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RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 2827

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SHOHEI TAKEDA

Application No.: 09/897,933

Filed: July 5, 2001

For: EMITTED-RADIO-WAVE
SHIELD AND IMAGE
FORMING APPARATUS
USING SAME

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Examiner: T. Dinh

Group Art Unit: 2827

December 2, 2002
(Monday)

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AMENDMENT AFTER FINAL REJECTION

Sir:

In response to the Official Action dated August 30, 2002, the Examiner is
respectfully requested to amend the above-identified application as follows:

12/03/2002 MGBREM1 00000035 09897933

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84.00 OP

IN THE SPECIFICATION:

Please substitute the paragraph starting at page 1, line 26 to page 2, line 13 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--An alternative arrangement is shown in Fig. 5, which is an external perspective view of an emitted-radio-wave shield according to the prior art. This shield includes a shield box 201 the opening of which has flanges 201b formed on its four sides 201a, and a shield plate 203 secured to the flanges 201b using screws 210 that are threadedly engaged with screw holes 201c formed in the flanges 201b at prescribed intervals. A board 202 (indicated by the dashed lines) for image processing is secured to the bottom side of the shield box 201 by screws or the like (not shown). Further, the shield plate 203 is secured to the flanges 201b of the shield box via shield members 204 that have been cut to prescribed lengths, thereby reducing the number of screws 210 needed to secure the shield plate 203 to the shield box 201.--

Please substitute the paragraph starting at page 4, line 12 and ending at line 13, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Fig. 2, including Figs 2A and 2B, is a sectional view showing a principal portion of the emitted-radio-wave shield, where Fig. 2A illustrates a first embodiment having shield members attached to flanges of a shield box, and Fig. 2B illustrates a second

embodiment having the shield members attached to a shield plate opposite the flanges of the shield box.--

Please substitute the paragraph starting at page 5, line 19 and ending at line 23, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--In a first embodiment, as illustrated in Fig. 2A, four shield members 4 formed from resilient bodies are secured on respective ones of the four flanges 1b, which constitute the joining surfaces of the shield box 1 and shield plate 3, so as to be electrically connected to the shield box 1.--

Please substitute the paragraph starting at page 7, line 4 and ending at line 9, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--In the arrangement described above, the shield plate 3 is provided with the protrusions 3a at the intervals t and the shield members 4 are secured in a contact state in which they are electrically connected to the shield box 1. The arrangement is such that the protrusions 3a press the shield members 4.--

Please substitute the paragraph starting at page 7, line 14 and ending at line 18, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--In a second, alternative embodiment, as illustrated in Fig. 2B, the same effects can be obtained by securing the shield members 4 in a state in which they are electrically connected to the shield plate 3 and providing the shield box 1 with protrusions.--

IN THE CLAIMS:

Please cancel Claims 8 and 12 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1 to 3, 5, 7, 9, 11 and 13, and add new Claims 15 to 17, as follows. A marked-up copy of Claims 1 to 3, 5, 7, 9, 11 and 13 showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently amended, have been reproduced below for the Examiner's convenience.

1. (Twice Amended) An emitted-radio-wave shield comprising:
a shield box housing a circuit board;
a shield plate removably secured to said shield box; and
a shield member formed from a resilient body, which is disposed at a joint between said shield box and said shield plate, and is attached to said shield box, for

shielding emitted radio waves from the circuit board in a state in which said shield plate is secured to said shield box;

wherein said shield plate is formed to have a plurality of protrusions, which project toward said shield member, so as to contact and press said shield member, such that a surface of said shield member deforms in a concave shape so as to engage with said protrusions.

2. (Amended) The shield according to claim 1, wherein the plurality of protrusions are formed on said shield plate at regular intervals.

3. (Amended) The shield according to claim 2, wherein the regular interval is 60 mm or less.

5. (Twice Amended) An emitted-radio-wave shield comprising:
a shield box housing a circuit board;
a shield plate removably secured to said shield box; and
a shield member formed from a resilient body, which is disposed at a joint between said shield box and said shield plate, and is attached to said shield plate, for shielding emitted radio waves from the circuit board in a state in which said shield plate is secured to said shield box;

wherein said shield box is formed to have a plurality of protrusions, which project toward said shield member, so as to contact and press said shield member, such that

a surface of said shield member deforms in a concave shape so as to engage with said protrusions.

6. (Unamended) The shield according to claim 5, wherein said plurality of protrusions are formed on said shield box at regular intervals.

7. (Amended) The shield according to claim 6, wherein the regular interval is 60 mm or less.

9. (Twice Amended) An emitted-radio-wave shield comprising:
a shield box housing a circuit board, said shield box having an opening,
which is formed to include a flange, and locking means;
a shield plate removably secured to the flange; and
a shield member formed from a resilient body and, which is disposed on the flange constituting a joint between said shield box and said shield plate and is attached to said shield box, for shielding emitted radio waves from the circuit board in a state in which said shield plate is secured to said shield box;

wherein said shield plate is formed to have a plurality of protrusions, which project toward said shield member, so as to contact and press said shield member;

one edge of said shield plate is formed to have projections and said flange is formed to have corresponding through-holes for mating with respective ones of the projections; and

an edge of said shield plate opposite said one edge is formed to have

a locking portion for locking engagement with said locking means of said shield box.

10. (Unamended) The shield according to claim 9, wherein said plurality of protrusions are formed on said shield plate at regular intervals.

11. (Amended) The shield according to claim 10, wherein the regular interval is 60 mm or less.

13. (Amended) An image forming apparatus comprising:
an image processing circuit board that converts an image to an electrical signal and processes the electrical signal of the image; and
an emitted-radio-wave shield comprising:
a shield box housing said image processing circuit board;
a shield plate removably secured to said shield box; and
a shield member formed from a resilient body and, which is disposed at a joint between said shield box and said shield plate and is attached to said shield box, for shielding emitted radio waves from the circuit board in a state in which said shield plate is secured to said shield box;
wherein said shield plate is formed to have a plurality of protrusions, which project toward said shield member, so as to contact and press said shield member, such that a surface of said shield member deforms in a concave shape so as to engage with said protrusions.

14. The emitted-radio-wave shield according to Claim 1, wherein said shield box has a locking means, and said shield plate has a locking portion to be locked to said locking means.

--15. (New) An emitted-radio-wave shield according to Claim 1, wherein said shield member is attached in electrical connection to said shield box.

16. (New) An emitted-radio-wave shield according to Claim 5, wherein said shield member is attached in electrical connection to said shield plate.

17. (New) An emitted-radio-wave shield according to Claim 9, wherein said shield member is attached in electrical connection to said shield box.--

REMARKS

Claims 1 to 3, 5 to 7, 9 to 11 and 13 to 17 now are presented for examination. Claims 1, 5, 9 and 13 are the independent claims. Claims 4 and 8 have been canceled. Claims 1, 3, 7, 9, 11 and 13 have been amended. Claims 15 to 17 are newly presented.

In the Official Action, the drawings were objected to as failing to illustrate each feature recited in the claims, and Claims 5 to 8 were rejected under 35 U.S.C. § 112, first paragraph, for the same reason. Claims 1 to 3 and 5 to 14 further were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1 to 3, 5 to 8 and 13 were rejected under 35 U.S.C. § 103(a), as unpatentable over Applicant's disclosure in Fig. 5

and the corresponding written description (Applicant's Admitted Prior Art; "PA") in view of U.S. Patent No. 6,301,125 (Maeda). Reconsideration and withdrawal of the objection and rejections respectfully are requested in view of the above amendments and the following remarks.

Initially, Applicant gratefully acknowledges the Examiner's renewed indication that the application contains allowable subject matter, and that Claims 9 to 12 are allowed/allowable over the prior art of record.

The formal objection to the drawings respectfully is traversed. Nevertheless, without conceding the propriety of the objection, by separate paper filed concurrently herewith Applicant has submitted a Request for Approval to Amend the Drawings; in the Request, Applicant has proposed to add an additional figure, --Figure 2B--, which illustrates the second, alternative embodiment of the shield box/shield member/shield plate combination, in which "the same effect can be obtained by securing the shield members in a state in which they are electrically connected to the shield plate 3 and providing the shield box 1 with protrusions [1d]", that is, the shield member is attached to the shield plate and the protrusions are provided on the shield box. Support for the proposed new figure may be found in the original disclosure at original "Fig. 2" (now presented as amended --Fig. 2A--; Fig. 2B includes substantially the same individual elements as in the arrangement of the first embodiment), and the corresponding text at page 7, lines 14 to 19 (which Applicant has proposed to amend herein to make specific reference to new --Fig. 2B--); this second, alternative embodiment also corresponds to the features originally recited in independent Claim 5. No new matter has been added.

The formal rejection of Claims 5 to 8 under 35 U.S.C. § 112, first paragraph, respectfully is traversed for the same reasons.

The formal rejection of the claims under § 112, second paragraph, also respectfully is traversed. Nevertheless, without conceding the propriety of the rejection, independent Claims 1, 5 and 9 and Claim 13 (re-presented herein in independent form) have been amended to delete the language “in electrical connection” objected to by the Examiner.

In this regard, newly presented dependent Claims 15 to 17 have been added to provide Applicants with an additional scope of protection commensurate with the disclosure. Specifically, dependent Claims 15 to 17 have been added to re-present the feature of “a shield member...is attached in electrical connection to said shield box” (Claims 1 and 13), and “a shield member...is attached in electrical connection to said shield plate” (Claim 5). Support for these claimed features may be found in Fig. 2 (now Fig. 2A and Fig. 2B), and the corresponding written disclosure at page 5, lines 19 to 23 and page 7, lines 14 to 18. No new matter has been added.

Accordingly, Applicant submits that Claims 1 to 3, 5 to 7, 9 to 11 and 13 to 17 as amended/newly presented, fully meet the requirements of 35 U.S.C. §112, first and second paragraphs, and that Claims 9 to 11 and 17 are in condition for allowance.

The present invention relates to a novel emitted-radio-wave shield and image forming apparatus containing such a shield. In one aspect, as now recited in independent Claim 1, the emitted-radio-wave shield comprises a shield box housing a circuit board, a shield plate removably secured to said shield box, and a shield member formed from a resilient body, disposed at a joint between the shield box and the shield

plate, and attached to the shield box, for shielding emitted radio waves from the circuit board in a state in which the shield plate is secured to the shield box. The shield plate is formed to have a plurality of protrusions, which project toward the shield member, so as to contact and press the shield member, such that a surface of the shield member deforms in a concave shape so as to engage with the protrusions.

Re-presented independent Claim 13 recites similar features with respect to an image forming apparatus comprising an image processing circuit board and such an emitted-radio-wave shield.

In a similar aspect, as now recited in independent Claim 5, the emitted-radio-wave shield similarly comprises a shield box, a shield plate, and a shield member; in this aspect, the shield member is attached to the shield plate, and the shield box is formed to have the plurality of protrusions, which project toward the shield member, so as to contact and press the shield member, such that a surface of the shield member deforms in a concave shape so as to engage with the protrusions.

Thus, in each aspect, the present invention recites the features of a shield member formed from a resilient body, which is disposed at a joint between the shield box and the shield plate, and attached to one of the shield box and the shield plate, for shielding emitted radio waves from the circuit board in a state in which the shield plate is secured to the shield box, and wherein the other one of the shield box and the shield plate is formed with a plurality of protrusions, which project toward the shield member, so as to contact and press the shield member, such that a surface of the shield member deforms in a concave shape so as to engage with the protrusions.

Applicant submits that the prior art fails to anticipate the present invention. Moreover, Applicant submits that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

Applicant's admitted prior art (Figure 5 and the corresponding text; "PA") discloses an emitted-radio-wave shield comprising a shield box, a shield plate removably secured to the shield box, and a shield member disposed at a joint between the shield box and the shield plate. However, as acknowledged by the Examiner, Applicant's admitted prior fails to disclose or suggest at least the above-described features of the present invention. In particular, the conventional structure of Figure 5 fails to disclose or suggest the features of a shield member, disposed at a joint between the shield box and the shield plate, and attached to the shield box or the shield plate, wherein the other one of the shield box and the shield plate is provided with a plurality of protrusions, which project toward the shield member, so as to contact and press the shield member, such that a surface of the shield member deforms in a concave shape so as to engage with the projections, as disclosed and claimed in the present application.

The Maeda '125 patent relates to a unit with shield, and discloses a unit with shield including a sub-circuit board, where the sub-circuit board is covered by a first shield plate and a second shield plate engaged with each other through the sub-shield board. However, Applicant submits that the Maeda '125 patent fails to disclose or suggest at least the above-described features of the present invention. Rather, the Maeda '125 patent merely discloses that the first shield plate 12 is provided with a plurality of engaging portions 16a, 16b, and the second shield plate 14 is provided with a corresponding plurality

of engaging portions 18a, 18b, whereby the first shield plate and the second shield plate are engageable together by mating these respective engaging portions 16a/18a, 16b/18b.

Nowhere does the Maeda '125 patent disclose or suggest the feature of a shield member disposed at a joint between a shield box and a shield plate, and attached to the shield box or shield plate, wherein the other one of the shield box and shield plate is provided with a plurality of protrusions, which project toward the shield member, so as to contact and press the shield member, such that a surface of the shield member deforms in a concave shape so as to engage with the protrusions, as disclosed and claimed in the present application. Nor is the Maeda '125 patent believed to add anything to Applicant's admitted prior art "PA" that would make obvious the claimed invention.

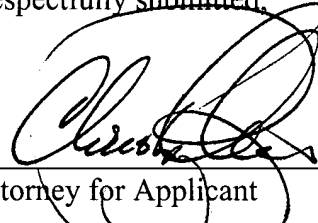
For the above reasons, Applicant submits that independent Claims 1, 5 and 13 are allowable over the cited art.

Claims 2, 3, 6, 7 and 14 to 16 variously depend from Claims 1 and 5, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of independent Claims 1 and 5, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Applicant believes that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submits that the application is in allowable form. Favorable consideration of the claims and passage to issue of the present application at the Examiner's earliest convenience earnestly are solicited.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



Attorney for Applicant

Registration No. 32,078

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

CPW\gmc

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